REMARKS

Claims 1-20 were pending in the current application. Applicants have amended claims 1, 6, 11, and 18-20. Reexamination and reconsideration of all of the claims are respectfully requested.

§§ 102 and 103

The Office Action rejected claims 1-4, 11-14, and 18-20 under 35 U.S.C. §102(a) based on allegedly admitted prior art (AAPA). The Office Action also rejected claims 5, 10, and 15 under 35 U.S.C. §103 based on AAPA.

Applicants have amended independent claims 1, 6, and 11. Applicants focus this discussion on two drawings and related text in the present specification – FIG. 2 and FIG. 8. These Figures and related text serve to show what "an alternating, unipolar-carrier waveform" is and is not and serve to illustrate the differences between the claims and AAPA.

FIG. 2 illustrates a waveform previously employed to drive pi-cells. As stated in the Specification at p. 4, ll. 9-17:

> Since the inception of pi-cells, they have generally been driven by an **alternating polarity waveform** of the sort shown in FIG. 2. Bursts of a carrier 201 of 1-2 kHz or so, which activate the cell, occur every other field. When the cell is inactive, the voltage across it is zero. This waveform has a net DC value of zero volts, with the result that the integral of the voltage applied across the cell over a long period of time is zero. The cell spends the same amount of time with a positive voltage across it as it does with a negative voltage across it. This is required to prevent the breakdown of the cell through transmigration of the electroplating from one electrode to the other.

(emphasis added).

This waveform is called an "alternating polarity waveform", and includes bursts of energy having both positive and negative values, or of both positive and negative polarity. Thus previous designs employed an alternating polarity waveform, or waveforms similar to the one pictured in FIG. 2.

FIG. 8 illustrates a different waveform – note that each series of pulses or burst when energy is being applied to the pi-cell within the waveform of FIG. 8 either has no positive polarity or no negative polarity. This is referred to by the inventors in the specification as thus termed an "alternating, unipolar-carrier waveform," as differentiated from the "alternating polarity waveform" such as the waveform shown in FIG. 2. From the Specification, p. 7, ll. 16-28:

> We created a new type of waveform that has a carrier, but where the carrier does not cross through zero. We called this waveform an **Alternating Unipolar Carrier System**. FIG. 8 shows the photometer measurement of the response of a cell driven by an Alternating Unipolar Carrier. The upper trace 801 shows the drive waveform, and the bottom trace 802 shows the photometer output.
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> The advantage of the **Alternating, Unipolar-Carrier waveform** is that it has less of a visible artifact than the conventional carrier waveform but reduces the appearance of ion migration defects compared to the quasi-static waveform. The peak activation voltage, the intermediate activation voltage, and the nature and values of bias all have an impact on the image quality....

(emphasis added)

The term "unipolar" means having a single pole or polarity – here, either positive or negative as shown in FIG. 8. The FIG. 2 waveform is not "unipolar."

Claim 1

Claim 1 requires "applying an alternating, unipolar-carrier waveform to the segmented pi-cell modulator, wherein the carrier waveform does not change polarity within a time period that the segmented pi-cell modulator is energized." Applying an alternating unipolar-carrier waveform means applying a single pole or polarity waveform, either positive or negative, which the waveform of FIG. 2 is not. FIG. 2 illustrates applying an alternating polarity waveform – both positive and negative polarities, alternating between the two. Further, claim 1 expressly states that "the carrier waveform does not change polarity within a time period that the segmented pi-cell modulator is energized." FIG. 2 does not show this – indeed, FIG. 2 shows that the waveform ***does*** change polarity within the time period that the pi-cell modulator is energized. Each burst of energy in FIG. 2, which energizes the pi-cell as described in the specification, changes polarity from positive to negative. The waveform of FIG. 8 does not do this – again, it is either positive or negative.

The Office Action simply states that FIG. 2 shows an "alternating unipolar carrier waveform," which, as noted above, it does not. Office Action, p. 3. The Office Action goes on to state that the carrier waveform not changing polarity "within a time period (i.e., the time period for applying positive voltage) that the segmented pi-cell modulator is energized" is shown by FIG. 2 and the Specification, p. 3 l. 29 – p. 4, l. 17. The pertinent paragraph from this cited range is the paragraph at p. 4, ll. 9-17, reproduced above, which says that the alternating polarity waveform is employed.

Applicants are a bit unclear as to whether the Office Action is alleging that individual pulses in FIG. 2, such as one positive pulse in the first (leftmost) energy burst of the waveform of FIG. 2, satisfy the claim language. FIG. 2 shows five separate, individual positive pulses within the first energy burst. Even if this is being relied on, namely that a single positive burst forms an "alternating unipolar carrier waveform," this

is not correct, as it is not "alternating" as that word is understood, particularly based on the use of the word "alternating" in the present specification. Further, "the alternating, unipolar-carrier waveform does not change polarity within a time period that the segmented pi-cell modulator is energized" indicates the carrier does not change polarity when the pi-cell is energized. This cannot be said for the waveform of FIG. 2, either in its entirety or in parts of the waveform. The pi-cell is energized and the alternating polarity waveform is applied for a period of time, such as a burst of five positive and five negative pulses, and subsequently the alternating polarity waveform is turned off and de minimis energy is applied. Thus the alternating polarity waveform of FIG. 2 ***does*** change polarity "within a time period that the segmented pi-cell modulator is energized," even if only attempting to account for each individual pulse in the multiple burst pulse.

Claim 11

Similar to claim 1, claim 11 requires "applying an alternating, unipolar carrier waveform to the segmented pi-cell modulator, wherein the alternating, unipolar carrier waveform does not change polarity within a time period that the segmented pi-cell modulator is energized." As with claim 1, AAPA and specifically FIG. 2 does not show an alternating unipolar carrier waveform as discussed above. Further, as discussed above, the waveform of FIG. 2 ***does*** "change polarity within a time period that the segmented pi-cell modulator is energized." Thus, as with claim 1, claim 11 is not anticipated by AAPA.

Claim 6

Claim 6 recites:

applying a first modulating waveform having a carrier signal of a first polarity to the segmented pi-cell modulator during a first time period, wherein the carrier signal does not change polarity during the first time period;

removing the first modulating waveform for a finite period comprising application of de minimis energy; and

applying a second modulating waveform having a carrier signal of a second polarity opposite the first polarity to the segmented pi-cell modulator during a second time period, wherein the carrier signal does not change polarity during the second time period

The first waveform is said to be "modulating" and has a first polarity, where the signal "does not change polarity" during the first time period. Similar to claim 1, FIG. 2 does not show a waveform that is "modulating" and "does not change polarity." The waveform of FIG. 2 does change polarity.

After application of de minimis energy, a second "modulating" waveform having a carrier signal of a second polarity is applied. The second modulating waveform has polarity opposite the first polarity. Also, the signal does not change polarity during the second time period. This is not shown by AAPA, and particularly FIG. 2, which shows an alternating polarity (positive-negative) waveform. Thus the waveform of FIG. 2 does not contain a carrier signal of a second polarity, opposite the first polarity. As previously discussed, within the FIG. 2 waveform, the signal ***does*** change polarity during the second time period. Again, reliance on only a part of the waveform of FIG. 2 does not conform to the limitations of this claim 6. As a result, AAPA does not anticipate claim 6.

Claims depending from allowable claims 1, 6, and 11 are allowable as they include limitations not found in the cited reference based at least in part on their dependence from allowable base claims. However, Applicants separately argue the propriety of certain dependent claim rejections, namely the "short rest period" claims 5, 10, and 15.

Claims 5, 10, and 15

The Office Action further rejects claims 5, 10, and 15 by asserting this 100 millisecond short rest period would have been obvious, without citing a reference. Applicants submit that the Office Action is simply making this allegation with no support in an effort to deprecate Applicants' invention.

The Office Action therefore relies on no specific reference in rejecting the limitation "wherein the small rest period is approximately a few hundred milliseconds." Rather, such a rejection relies in part on purported knowledge of one skilled in the art at the time of the invention. Thus in accordance with 37 C.F.R. § 1.104 (d)(2) and to preserve Applicants' argument on appeal, Applicants request that the Examiner provide an affidavit that supports the rejection of the claims based on the official notice, common knowledge, or personal knowledge of the Examiner, or provide a reference demonstrating the purported common knowledge. *See In re Lee*, 277 F.3d 1338, 1344-45, 61 U.S.P.Q.2d 1430, 1435 (Fed. Cir. 2002) (finding that reliance on "common knowledge and common sense" did not fulfill the PTO's obligation to cite references to support its conclusions, as PTO must document its reasonings on the record to allow accountability and effective appellate review); *see also, In re Zurko*, 59 USPQ2d 1693 (Fed. Cir. 2001) ("This assessment of basic knowledge and common sense was not based on any evidence in the record and, therefore, lacks substantial evidence support. ... With respect to core factual findings in a determination of patentability, however, the Board cannot simply reach conclusions based on its own understanding or experience -- or on its assessment of what would be basic knowledge or common sense"); Manual of Patent Examining Procedure 2144.03 ("If the applicant traverses [] an assertion [that a concept is 'well known' or 'matters of common knowledge'] the examiner should cite a reference in support of his or her position."). Applicant requests the Examiner produce a reference or references showing a small rest period of less than approximately 100 milliseconds in connection with an alternating, unipolar-carrier waveform applied to a segmented pi-cell modulator, wherein the carrier waveform does not change polarity within a time period that the segmented pi-cell modulator is energized, together with a motivation to combine the references found within the references themselves, or the Examiner produce an affidavit in support of the rejection.

Applicants therefore submit that all claims, as amended, are allowable in view of §§ 102 and 103.

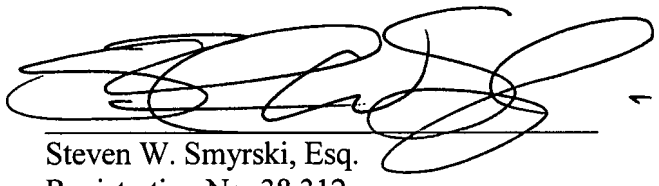
CONCLUSION

In view of the foregoing, it is respectfully submitted that all claims of the present application are in condition for allowance. Reconsideration of all of the claims, as amended, is respectfully requested and allowance of all pending claims at an early date is solicited.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Applicants believe that no fees are due in accordance with this Amendment beyond those included herewith. Should any additional fees be due, the Commissioner is hereby authorized to charge any deficiencies or credit any overpayment to Deposit Account 502026.

Respectfully submitted,



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